REMARKS

At the outset, the Applicant wishes to thank Patent Examiner Catherine Simone for the many courtesies extended to the undersigned attorney during the Personal Interview on February 19, 2008, at the U.S.P.T.O. The substance of this Personal Interview is set forth in the Examiner Interview Summary, and in this Amendment.

The Applicant comments upon the prior art rejections of the claims as follows.

On Page 2 of the Office Action, the Patent Examiner has withdrawn the 35 U.S.C. 103(a) rejection of claims 2, 7, 9, 11, 14, 16, 17, 18, 19, 20, 21, 24, 28-30, 31 and 32 based upon the Amendment filed August 9, 2007.

On Page 3 of the Office Action, the Patent Examiner has provisionally rejected claims 2, 7, 9, 11, 14, 16-21, 24, and 28-32 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claims of copending U.S. Patent Application Serial No. 10/680,013. A proper Terminal Disclaimer will be filed at a future time to overcome this rejection.

On Page 4 of the Office Action, the Patent Examiner has rejected claims 2, 7, 9, 11, 14, 16, 18, 20, 21, 24, 28-30, and 32 under 35 U.S.C. 103(a) as being unpatentable over *Wiercinski et al (U.S. Patent No. 5,687,517)* in view of *Hurst (U.S. Patent No. 3,900,102)*.

On Page 7 of the Office Action, the Patent Examiner has rejected claims 17 and 19 under 35 U.S.C. 103(a) as being unpatentable over *Wiercinski et al (U.S. Patent No. 5,687,517)* in view of *Hurst (U.S. Patent No. 3,900,102)* and further in view of *Zickell et al (U.S. Patent No. 4,992,315)*.

Also on Page 7 of the Office Action, the Patent Examiner has rejected claim 31 under 35 U.S.C. 103(a) as being unpatentable over *Wiercinski et al (U.S. Patent No. 5,687,517)* in view of *Hurst (U.S. Patent No. 3,900,102)* and further in view of *Kalkanoglu (U.S. Patent No. 4,757,652)*.

The present invention is directed to a film-bitumen combination consisting of at least three layers wherein said at least three layers consist of a bituminous layer and at least two film layers made from different materials, said bituminous layer being coated on said at least two film layers;

said at least two film layers consisting of a first film layer and a second film layer produced from a polyolefin, polypropylene, polyamide, polyethylene terephthalate (PET), or polyacrylonitrile;

said first film layer being located further away from said bituminous layer and having a larger coefficient of elongation than said second film layer;

wherein at least a first edge of said at least two film layers projects beyond the bituminous layer and at least a second edge of said at least two film layers is shorter than the bituminous layer;

wherein a surface of a side of the combination facing away from the bituminous layer has been treated to have non-slip properties;

wherein each individual film layer is arranged in the combination in accordance with its thermal stability and its mechanical strength;

a barrier layer against mineral oils, oxygen or UV radiation disposed between two adjacent layers of said at least two film layers; and

wherein said barrier layer consists of a layer of lacquer.

During the Personal Interview, it was pointed out that a substantial difference between *Wiercinski* and the present

invention is the asymmetric construction of the present invention.

The combination structure according to *Wiercinski* is built up by two multilayer films 22 and 22A (Fig. 1) as discussed in the Office Action. These two films 22 and 22A are built up by three layers of different material. The multilayer films 22 and 22A are of the same construction. Therefore, the *Wiercinski* complete film built by films 22 and 22A is always symmetrical.

The structure according to the present invention is itself built up by an asymmetric construction that is a substantial and important difference over the prior art. Therefore, *Wiercinski* does not disclose the claimed structure set forth in the claims and does not lead to the present invention even if combined with *Hurst, Zickell* and *Kaklanoglu*.

During the Personal Interview there was a discussion of *Wiercinski*, in column 6, lines 49 and 50 that the non-skid material in this prior art reference should have a lower Young's modulus of elasticity than the outermost film layer material of the carrier sheet 14. There was a discussion that one possible way to include a convincing showing of unexpected results would be to show that the Young's modulus of elasticity of the

materials recited in claims 20 and 21 has a much higher, for example, Young's modulus of elasticity than the materials listed there in *Wiercinski*, in column 6, in lines 52 through 54.

It was also discussed during the Personal Interview that *Wiercinski*, in claim 1 and in claim 13, specifically recites a coating having a lower Young's modulus of elasticity than the outermost film layer.

While this prior art reference refers to the *Young's* modulus of elasticity, the present invention recites the thermal expansion coefficient in the claims. This is a significant difference.

Wiercinski does not teach, suggest or disclose anything about the thermal expansion of the various layers in the prior art structure. That is a substantial difference.

Regarding the pending claims, it is to be pointed out that in claim 32 that a first film layer being located further away from the bituminous layer has a larger coefficient of elongation (coefficient of thermal expansion) than a second film layer.

Therefore, the claimed invention is directed to an asymmetric construction. This feature must always be structurally present. Therefore, all layers further away from the bituminous layer must have a greater thermal expansion than a layer located nearer to the bituminous layer. The following are test results to be reported:

A construction according to *Wiercinski*:

Thermal Expansion of the layers (references according to those shown in Fig. 2 of *Wiercinski*):

24/24A: LLDPE or LDPE: LLDPE: $20*10^{-5}K^{-1}$ LDPE: $17*10^{-5}K^{-1}$

26/26A: HDPE or PP: HDPE: $20*10^{-5}K^{-1}$ PP: $12*10^{-5}K^{-1}$

28/28A: LLDPE or LDPE: LLDPE: $20*10^{-5}K^{-1}$ LDPE: $17*10^{-5}K^{-1}$

Thermal expansion of the layers of the present invention:

PP: $12*10^{-5}K^{-1}$

LDPE: $20*10^{-5}K^{-1}$

LLDPE: $17*10^{-5}K^{-1}$

HDPE: $20*10^{-5}K^{-1}$

PA: $7.5*10^{-5}K^{-1}$

PET: $8*10^{-5}K^{-1}$

The linear thermal expansion of a plastic layer for a film of 1000m width is around $10*^{-2}mmK^{-1}$. On a roof, temperature differences of more than 100 K are occurring (e.g. in cold winter with sun shining, temperatures of around 70°C are reached on black surfaces without wind. Therefore the linear thermal expansion is between 7.5 and 20mm for a roll of 1000mm in width.

Hence, the difference in thermal expansion between different layers is up to 12.5 mm.

If those different layers are adjacent to each other, significant forces are produced which cause bending of the plastic film construction.

In the prior art, it was attempted to try to compensate for those bending forces by a symmetric construction of the plastic film.

In Appendix "A" the following pictures of those symmetric constructions are shown.

Tests have been made in a thermal test chamber.

Different materials according to the above shown constructions have been put into such a chamber.

40 cycles between -30° and 70°C have been run through. After these tests had been finished, the samples were examined. The results are shown in the above mentioned Appendix "A."

In conclusion, the prior art symmetrical construction lead to material failure, while the claimed "asymmetrical" construction did not fail. This unexpected improvement in results for the claimed invention relative to the prior art structure (i.e.-"asymmetrical" versus "symmetrical" of *Wiercinski*) is very strong indicia of the nonobviousness of the claimed invention.

The deficiencies in the teachings of the primary reference *Wiercinski* are not overcome by the disclosures of the secondary references. None of the other cited prior art references namely: *Hurst, Zickell* and *Kalkanoglu*, teach or suggest the claimed invention.

For all the reasons set forth above, no prior art reference (*Wiercinski et al, Hurst, Zickell,* or *Kalkanoglu)* provides an identical disclosure of the claimed invention. Hence, the

present invention is not anticipated under 35 U.S.C. 102. For all these reasons, the present invention and all the claims are patentable under 35 U.S.C. 103 over all the prior art applied by the Patent Examiner. Withdrawal of these grounds of rejection is respectfully requested. A prompt notification of allowability is respectfully requested.

Respectfully submitted,

Michael FÜRST

COLLARD & ROE, P.C.
1077 Northern Boulevard
Roslyn, New York 11576
(516) 365-9802

Edward R. Freedman, ~~Reg.No.26,048~~
Frederick J. Dorchak, Reg.No.29,298
Attorneys for Applicant

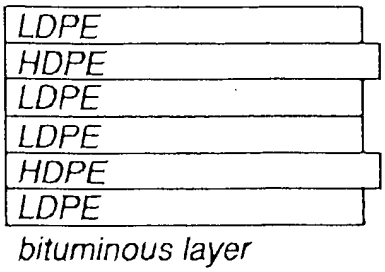
ERF:lgh
Enclosure: 1. Copy of Petition for three-month Extension of Time-Large Entity
2. Appendix "A"

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on April 30, 2008.

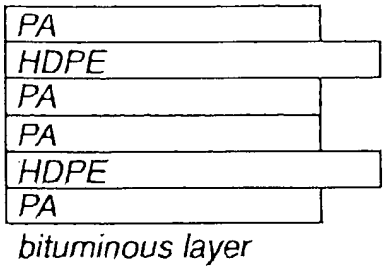
Amy Klein

APPENDIX A

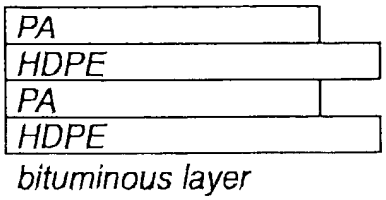
state of the art (e.g. Wiecinski)



no curling, but multilayer film delaminates in spite of low bonding and different thermal expansion in relation to a bituminous layer



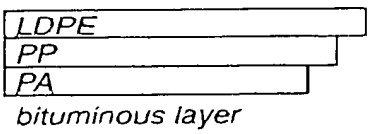
no curling, but multilayer film delaminates in spite of low bonding and different thermal expansion in relation to a bituminous layer



normally no curling, but multilayer film delaminates in spite of low bonding and different thermal expansion in relation to a bituminous layer

The idea of the present invention is to use a asymmetric construction for a multilayer film:

present invention



the multilayer construction produces a force in the direction of the PA layer and consequently to the bituminous layer at higher temperatures around 70 °C occuring at roofes.
No Delamination.